Contents Volume 78 (1993)

Vol. 78, Nos. 1+2 (March 25, 1993)

Swelling of ionic and neutral polymer networks in ionic solutions
D. Hariharan and N.A. Peppas (West Lafayette, IN, USA) 1

Preparation of a high performance bipolar membrane
R. Simons (Kensington, N.S.W., Australia) 13

Identification of the ionic species in anion exchange membranes equilibrated with sulphuric acid solutions by means of Raman spectroscopy and radiotracers
I. Tugas, J.M. Lambert, J. Maillols, J.L. Bribes, G. Pourcelly and C. Gavach (Montpellier, France) 25

Effect of temperature on protein conformation and activity during ultrafiltration
M.J. Campbell, R.P. Walter (Canterbury, Kent, United Kingdom), R. McLoughlin (Swindon, United Kingdom) and C.J. Knowles (Canterbury, Kent, United Kingdom) 35

Heterogeneous modification of ultrafiltration membranes made from poly(vinylidene fluoride) and their characterization
D. Düputell and E. Staude (Essen, Germany) 45

A novel technique in membrane separation processes: Electroosmotic separation of benzene in ethanol solution
A.K. Jain, R.K. Srivastava, M.K. Gupta and S.K. Das (Gorakhpur, India) 53

Pervaporation and evaporation characteristics of a new type of ion exchange membrane
R. Simons (Sydney, N.S.W., Australia), J. Zuccon (Melbourne, N.S.W., Australia), M.R. Dickson and M. Shaw (Sydney, N.S.W., Australia) 63

Effect of temperature gradients on the activity of enzymes immobilized on natural polymeric matrices
D.G. Mita, M.A. Pecorella, P. Russo, S. Rossi, U. Bencivenga (Naples, Italy), P. Canciglia (Messina, Italy) and F.S. Gaeta (Naples, Italy) 69

Transport of dipeptides and phosphono dipeptides through an immobilized liquid membrane. Stereoselectivity of the process
P. Wieczorek, A. Kocorek (Opole, Poland), M. Bryjak, P. Kafarski and B. Lejczak (Wrocław, Poland) 83

A new spinning technique for hollow fiber ultrafiltration membranes
I.M. Wienk, H.A. Teunis, T.v.d. Boomgaard and C.A. Smolders (Enschede, The Netherlands) 93

Study of interaction between butyl alcohols and cellulose acetate polymers with reverse osmosis, high pressure liquid chromatography and pervaporation methods
T. Bálint, E. Nagy and M. Kraxner (Veszprém, Hungary) 101

Extraction and membrane transport of metal ions by some synthetic 9,10-anthraquinone and 9-anthrone derivatives. A selective system for calcium transport
S. Dadfarnia, M. Shamsipur, F. Tamaddon and H. Sharghi (Shiraz, Iran) 115

Polysulfone membranes. IV. Performance evaluation of Radel A/PVP membranes
C.M. Tam, M. Dal-Cin and M.D. Guiver (Ottawa, Ont., Canada) 123

Coupling phenomena in the removal of chlorinated hydrocarbons by means of pervaporation
S. Goethaert, C. Dotremont, M. Kuijpers, M. Michiels and C. Vandecasteele (Leuven, Belgium) 135

Transport properties of cation-exchange membranes in aqueous and methanolic solutions. Diffusion and osmosis
C.H. Hamann, V. Theile (Oldenburg, Germany) and S. Koter (Toruń, Poland) 147

Transport of electrolytes across cation-exchange membranes. Test of Onsager reciprocity in zero-current processes
S. Koter (Toruń, Poland) 155

Effects of solution properties on polarization redevelopment and flux in pressure pulsed ultrafiltration
V.G.J. Rodgers (Iowa City, IA, USA) and R.E. Sparks (St. Louis, Mo, USA) 163

Use of an internally staged permeator in the enrichment of methane from biogas
K. Li and W.K. Teo (, Singapore) 181

Letter to the Editor 191
Meeting Announcements 192
Meetings Calendar 195

Vol. 78, No. 3 (April 8, 1993)

Microporous hollow fibre membrane modules as gas–liquid contactors. Part 1. Physical mass transfer processes A specific application: Mass transfer in highly viscous liquids
H. Kreulen, C.A. Smolders, G.F. Versteeg and W.P.M. Van Swaaij (Enschede, The Netherlands) 197

Microporous hollow fibre membrane modules as gas–liquid contactors Part 2. Mass transfer with chemical reaction
H. Kreulen, C.A. Smolders, G.F. Versteeg and W.P.M. Van Swaaij (Enschede, The Netherlands) 217

Kinetic aspects of copper (II) transport across liquid membrane containing LIX-860 as a carrier
Z. Lazarova and L. Boyadzhiev (Sofia, Bulgaria) 239

Preparation of palladium–silver alloy membranes for hydrogen separation by the spray pyrolysis method
Z.Y. Li, H. Maeda, K. Kusakabe, S. Morooka (Fukuoka, Japan), H. Anzai and S. Akiyama (Fujisawa, Japan) 247

Ion-exchange membranes in extraction processes
O. Kedem and L. Bromberg (Rehovot, Israel) 255

A new approach to the evaluation of the effects of protein adsorption onto a polysulfone membrane
A.M. Brites and M.N.d. Pinho (Lisbao, Portugal) 265

Concentration of the extraction fluid from sulfuric acid treatment of phosphogypsum by membrane distillation
M. Tomaszewska (Szczecin, Poland) 277

Chemical composition of thin-film composite reverse osmosis membranes made from poly-2-vinylimidazoline
M.J. Hurndall, E.P. Jacobs and R.D. Sanderson (Stellenbosch, South Africa) 283

Book Review 299
Meetings Calendar 301
Instructions to authors 303
Author Index Volume 78 307
Subject Index Volume 78 308
Contents Volume 78 309